CLAIMS

What is claimed is:

1. A magnetic head having an air bearing surface, comprising:

a magnetoresistive sensor;

a magnetic, electrically conductive shield having a surface defining a plane and having first and second lateral sides, formed in proximity to and electrically insulated from said sensor;

first and second electrically conductive layers extending from said first and second sides of said shield, said first and second conductive layers being coplanar with and electrically insulated from said shield;

a first electrical lead connected with said first electrically conductive layer; and

a second electrical lead connected with said second electrically conductive layer.

2. A magnetic head as recited in claim 1 wherein said at least one of said first and second electrical circuits is electrically connected with said sensor.

3. A magnetic head as recited in claim 1 wherein said first and second electrically conductive layers comprise the same material as said shield.

4. A magnetic head as recited in claim 1 further comprising first and second electrically insulating gaps formed at said first and second sides of said shield, said gaps electrically isolating said first and second electrically conductive layers from said shield.

5. A magnetic head as recited in claim 1 wherein said sensor has a surface defining a second plane and wherein said shield and said sensor are parallel and non-coplanar.

6. A magnetic head, comprising:

a magnetoresistive sensor;

a shield layer formed in proximity to said sensor, said shield comprising a soft magnetic, electrically conductive material;

a layer of electrically conductive material adjacent to said shield;

a dielectric material disposed between said shield and said electrically conductive material layer and electrically isolating said shield therefrom;

a first electrically conductive lead in electrical communication with said layer of electrically conductive material; and

a second lead in electrical communication with said shield.

7. A magnetic head as in claim 6, wherein said electrically conductive layer is coplanar with said shield.

8. A magnetic head as in claim 6, wherein said electrically conductive layer is coplanar with said shield and comprises the same material as said shield.

9. A magnetic head as in claim 6, wherein said electrically conductive layer is formed in a common manufacturing step with said shield.

10. A magnetic head as in claim 6, wherein said shield is disposed above said sensor.

11. A magnetic head as in claim 6, wherein said shield is disposed below said sensor.

12. A method of manufacturing a magnetic head, comprising:

forming a layer of magnetic, electrically conductive material;

forming first and second electrically insulating gaps in said magnetic, electrically conductive material layer said first and second gaps terminating substantially at a predetermined lap stop location, said first and second gaps defining a central portion and first and second laterally opposed outer portions of said magnetic, electrically conductive layer;

forming a magnetoresistive sensor;

forming a first electrically conductive lead connected with said first outer portion of said magnetic, electrically conductive layer;

forming a second electrically conductive lead connected with said second outer portion of said magnetic, electrically conductive layer; and

performing a lapping operation until at least on of said first and second gaps is reached.

13. A method as recited in claim 12 further comprising measuring an electrical resistance between said first and second leads until an increase in said resistance indicates that said lap stop location has been reached.

14. A method as recited in claim 12 wherein a portion of said magnetic, electrically conductive material extending beyond said lap stop location is contiguous.

15. A method as recited in claim 12 wherein said magnetic, electrically insulating material is formed before the formation of said sensor so as to be formed below said sensor.

6. A method as recited in claim 12 wherein said magnetic, electrically insulating material is formed after the formation of said sensor so as to be formed above said sensor.

17. A method for constructing a magnetic head, comprising

forming a magnetoresistive sensor;

forming a layer of magnetic, electrically conductive material having proximal and distal ends, and first and second lateral side portions;

providing a gap in said layer of magnetic, electrically conductive material, said gap terminating short of said proximal end and extending through said distal end;

performing a lapping operation, said lapping operation initiating from said proximal end and proceeding toward said distal end;

measuring an electrical resistance between across said magnetic, electrically conductive layer from said first lateral side portion to said second lateral side portion;

ceasing lapping when said electrical resistance reaches a predetermined value.

18. A method as in claim 17 wherein said layer of magnetoresistive sensor is formed before the formation of said magnetic, electrically conductive layer.

19. A method as in claim 17, wherein said layer of magnetoresistive sensor is formed after the formation of said magnetic, electrically conductive layer.

20. A method as in claim 17, further comprising depositing a dielectric layer between said sensor and said magnetic electrically conductive material layer.

21. A magnetic recording system, comprising:

a housing;

a motor connected with said housing;

a spindle connected with said motor;

a magnetic disk mounted on said spindle for rotation about its own axix;

an actuator supported within said housing;

a slider supported by said actuator for movement across a surface of said disk;

a magnetic head formed on said slider, said magnetic head further comprising:

a magnetoresistive sensor;

a shield layer formed in proximity to said sensor, said shield comprising a soft magnetic, electrically conductive material;

a layer of electrically conductive material adjacent to said shield;

a dielectric material disposed between said shield and said electrically conductive material layer and electrically isolating said shield therefrom;

a first electrically conductive lead in electrical communication with said layer of electrically conductive material; and

a second lead in electrical communication with said shield.

22. A magnetic head, comprising:
a magnetic, electrically conductive shield;
a sensor formed above and electrically isolated from said shield;
first and second lap guides, electrically connected with said shield.

23. A magnetic head as in claim 22, wherein said first and second lap guides are coplanar with said sensor.

24. A magnetic head as in claim 22 wherein said first and second lap guides are comprise the same materials as said sensor.

25. A magnetic head as in claim 22 wherein said first and second lap guides are constructed in a common manufacturing step with said sensor.

26. A magnetic head as in claim 22 further comprising first and second vias, electrically connected said first and second lapping guides with said shield.

27. A magnetic head as in claim 22 further comprising first and second electrically conductive leads in electrical communication with said first and second lap guides.